IN THE SPECIFICATION

In the paragraph on page 1, lines 21-22, please amend the paragraph as follows:

It is well known to utilize highly reflective in applications where there is a probability of exposure to high optical fluence and over long periods of time. Such applications include, e.g., the optical pulse-stretching unit ("OpuS") contained, e.g., in an XLA-100 <u>high powered, high output pulse energy coatings,</u> excimer gas discharge laser made by the assignee of the present invention <u>and used for such applications as integrated circuit photolithography manufacturing processes</u>. Such highly reflective mirrors and the like, e.g., interference filters and also perhaps even anti-reflective coatings, are typically made of a substrate, e.g., a fused silica substrate with a multi-layered coating of dielectric materials of, e.g., differing materials, thicknesses and densities, as is well known in the art, e.g., a high reflectivity mirror made, e.g., by Corning, as a mirror, concave, 38.1 DIA, 1.66 mR, fused silica, part number 11290.

In the paragraph on page 2, line 5, please amend the paragraph as follows:

It is also known in the art that over time due to a phenomenon known as compaction the effective index of refraction goes up causing the curve shown in Fig. 1 to shift to the left, so-called blue shift. This causes, over time, the center wavelength λ, e.g., 193.368 for an ArF excimer laser system OpuS to migrate out of the bandpass, that is, shifting to the left. This in turn makes the moved reflectivity spectrum of the highly reflective mirror out of the region in which it is highly reflective (e.g., $\geq 99\%$) to a region where the mirror is much les reflective. Therefore, in that region, the mirror is much more absorptive, i.e., the coating stack becomes transmissive heating the substrate, resulting in damage to some or all of the dielectric layers, and destroying the mirror.

In the paragraph on page 4, line 1, please amend the paragraph as follows:

Applicants' observations [[of]] have shown the shift back to the regular bandpass after exposure to only indirect (scattered) DUV laser light, upon exposure to room air, and at the same time a failure to so shift back to the normal bandpass around the desired center λ, after direct exposure to DUV laser light.

In the paragraph on page 8, line 3, please amend the paragraph as follows:

The 50% reflectivity point shift dependency on number of shots [[is]] indicates that an LD sample shifts at a significantly higher rate at the first million shots then followed by a relative slower compaction, as illustrated in Fig. 3, whereas an HD sample experiences a slow shift first then a significantly accelerated rate after, e.g., about 0.5 Bp, which correlates with the spectral change observed, e.g., in Fig. 5. Another pair of the samples was found by applicants to behave similarly with slightly higher noise levels.

In the paragraph on page 8, lines 11-17, please amend the paragraph as follows:

Two Corning OPUS HR (highly reflective) mirrors were studied in two separate shot tests. One received 5 Bp and another received 264 Mp under the similar fluence level. The results of the two independent tests are summarized in ~~Figures 15 and 16~~Figure 6. In general, the reflectivity curves of the Corning mirrors appear to be more stable under the high fluence 193 nm exposure than the ARO LD (low density) and HD (high density) mirrors. Their 50% reflectivity points shift, if there is any, below the spectrometer resolution and measurement uncertainty for both cases.

In the paragraph on page 8, line 26, please amend the paragraph as follows:

The low density ARO OPuS high reflectivity mirrors under 193.368 nm exposure also experienced at least a two-stage reflectivity curve shift, a rapid water vapor desorption induced reflectivity shift at the first a few million shots, [[than]] <u>then</u> a slower shift, which may suggest a two-stage film compaction, a rapid compaction due to water vapor desorption followed by a slower film densification. The water vapor desorption induced film compaction may be the effect of both the N_2 purge environment and DUV exposure. The water desorption induced reflectivity curve shift was shown to be reversible at the witness spot that is only exposed to indirect (scattered) UV light, whereas the reflectivity curve shift in the directly exposed region appears to not be reversible.

In the paragraph on page 9, line 13, please amend the paragraph as follows:

The above results have led applicants to conclude that a solution to the above described problems with such mirrors exposed to such fluence over long periods is to expose the mirror to direct DUV light for a relatively short number <u>of</u> pulses, compared to full life, e.g., for 2b pulses at, e.g., a 9mJpulse energy. For roughly double that pulse energy the exposure can be lower, e.g., about 700 Mp, i.e., at, e.g., 3KHz, exposure for several days to the DUV fluence. This can be done, e.g., prior to ever placing the mirror into its intended optical system, e.g., an OpuS on a laser system. This can be utilized to induce a pretreatment limited compaction and water vapor (and/or other contaminant) desorption.